

REMARKS

Applicant notes that the examiner indicated that claims 9, 10, 13-18, 23-25, 32, 35, and 38 would be allowable if rewritten in independent form including the limitations of the base claims and any intervening claims.

However, for reasons that Applicant will discuss below, Applicant contends that the claims as amended above are also allowable.

The examiner rejected claims 1-8, 11, 12, 19-21, 26-31, 33, 34, 36 under 35 U.S.C. 102(b) as being anticipated by Dowling (U.S. patent 6,170,051).

Dowling does not disclose or suggest at least the features of “managing parallel processing of multiple tasks, including establishing a context for each of the multiple tasks, in which at least one of the multiple tasks requires execution of multiple instructions, [and] switching from processing one of the multiple tasks to another of the multiple tasks based on execution of the instructions,” as now recited in amended claim 1.

Dowling describes the use of multiple internal registers to permit more than one instruction stream to be multiplexed on an instruction-by-instruction basis (col. 9, line 66 to col. 10, line 9). In one embodiment in Dowling, each pipelined functional unit (335 or 365) receives one instruction per clock cycle (col. 10, lines 56-57), and switches between tasks or threads on a cycle-by-cycle basis (col. 11, lines 12-13). In Dowling, the switching of instructions from different streams is based on hardware clock cycles, not on execution of instructions.

Claim 1 includes managing parallel processing of multiple tasks, in which at least one of the tasks requires execution of multiple instructions, and the programming engine switches from processing one task to another task based on execution of the instructions. Examples of switching from processing one task to another task based on execution of the instructions are described in page 4, line 22 to page 6, line 4 of applicant’s specification. For example, if the programming engine processes a first task that requires accessing memory or performing some long latency operation, the programming engine switches to processing another task while waiting for the result of the memory access or long latency operation to return. Such “switch[ing] from processing one of the multiple tasks to another of the multiple tasks based on

execution of the instructions” is in contrast to switching of instructions from different streams based on hardware clock cycles, as disclosed in Dowling.

Claims 3-18 and new claims 39 and 40, which depend directly or indirectly from claim 1, are allowable for at least the same reasons as claim 1. Moreover, these claims add additional distinctive features. For example, claim 3 recites “establishing contexts for the assigned tasks comprises providing a software controlled cache,” and claim 4 recites “the software controlled cache is a content addressable memory (CAM).” Claim 39 recites “the at least one programming engine executes multiple instructions associated with a first one of the tasks, and switches to a second one of the tasks when an instruction associated with the first one of the tasks comprises a long latency operation.” Claim 40 recites “the at least one programming engine executes multiple instructions associated with a first one of the tasks, and switches to a second one of the tasks when an instruction associated with the first one of the tasks requires access to memory.” None of these features are suggested by Dowling.

Independent claims 19, 26, 30, and 33 are patentable for at least similar reasons as claim 1. Dependent claims 20-25, 27-29, 31, 32, and 34-38 are patentable for at least the same reasons as the claims on which they depend. Moreover, these claims add additional distinctive features. For example, claim 22 recites “the CAM includes a plurality of entries for monitoring least recently used variables.” Claim 28 recites “the instructions for establishing contexts for the assigned tasks comprises providing a software controlled cache.” Claim 37 recites “the CAM includes a plurality of entries for monitoring least recently used variables.” None of these features are suggested by Dowling.

Cancelled claims have been cancelled without prejudice. Any circumstance in which the applicant has addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner. Any circumstance in which the applicant has made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims. Any circumstance in which the applicant has amended a claim does not mean that the applicant concedes any of the examiner’s positions with respect to that claim or other claims.

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Enclosed is a \$120.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing attorney docket 10559-617001.

Respectfully submitted,

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** See attached document certifying that Rex Huang has limited recognition to practice before the U.S. Patent and Trademark Office under 37 CFR § 11.9(b).*